Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of shaping input packet traffic, said method comprising steps of:

determining a constraint parameter dependent upon a probability density function; and

constraining, based upon said parameter, transmission of the input packet traffic, thereby to produce output packet traffic ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said output traffic versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

2. (Previously Presented) The method according to claim 1, wherein prior to the determining step, the method comprises a further step of:

selecting a type of the probability density function.

3. (Previously Presented) The method according to claim 2, wherein a probability distribution function which is derived from the probability density function of the selected type is evaluated in conjunction with the determining step, thereby permitting said determining of the constraint parameter.

4. (Previously Presented) The method according to claim 2, wherein a probability distribution function which is derived from the probability density function of the selected type is evaluated prior to the determining step, thereby permitting said determining of the constraint parameter.

5. (Previously Presented) The method according to claim 4, wherein the evaluated probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the determining step comprises sub-steps of:

selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

deleting said smallest constraint parameter value from the look-up table.

6. (Previously Presented) The method according to claim 5, wherein the look-up table is refreshed to an original state after a time period.

7. (Previously Presented) The method according to claim 1, wherein the probability density function is an exponential function.

8. (Currently Amended) A packet traffic shaper comprising:

determination means configured to determine a constraint parameter dependent upon a probability density function; and

constraining means configured to constrain, based upon the parameter, transmission of traffic input to said constraining means, thereby to produce output traffic ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said output traffic versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

9. (Previously Presented) The packet traffic shaper according to claim 8, further comprising:

selection means configured to select a type of the probability density function.

10. (Previously Presented) The packet traffic shaper according to claim 9, further comprising:

derivation means configured to derive a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction with determining the constraint parameter.

11. (Previously Presented) The packet traffic shaper according to claim 9, further comprising:

derivation means configured to derive a probability distribution function from the probability density function of the selected type, said derivation being performed prior to determining the constraint parameter.

12. (Previously Presented) The packet traffic shaper according to claim 11, wherein the derived probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the determination means comprise:

selecting means configured to select, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

deleting means configured to delete said smallest constraint parameter value from the look-up table.

13. (Previously Presented) The packet traffic shaper according to claim 12, further comprising:

refresh means configured to refresh the look-up table to an original state after a time period.

14. (Previously Presented) The packet traffic shaper according to claim 8, wherein the probability density function is an exponential function.

15. (Currently Amended) A computer readable memory medium for storing a program for an apparatus which shapes input packet traffic, said program comprising:

code for a determining step for determining a constraint parameter dependent upon a probability density function; and

code for a constraining step for constraining, based upon said parameter, transmission of the input packet traffic, thereby to produce output packet traffic ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said output traffic versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

16. (Previously Presented) The computer readable memory medium according to claim 15, further comprising code for a selecting step for selecting a type of the probability density function.

17. (Previously Presented) The computer readable memory medium according to claim 16, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction determining the constraint parameter.

18. (Previously Presented) The computer readable memory medium according to claim 16, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed prior to determining the constraint parameter.

19. (Previously Presented) The computer readable memory medium according to claim 18, wherein the derived probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the code for the determining step comprises:

code for a selecting step for selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

code for a deleting step for deleting said smallest constraint parameter value from the look-up table.

20. (Previously Presented) The computer readable memory medium according to claim 19, further comprising:

code for a refresh step for refreshing the look-up table to an original state after a time period.

21. (Previously Presented) The computer readable memory medium according to claim 15, wherein the probability density function is an exponential function.

22. (Currently Amended) A computer program for an apparatus which shapes input packet traffic, said program comprising:

code for a determining step for determining a constraint parameter dependent upon a probability density function; and

code for a constraining step for constraining, based upon said parameter, transmission of the input packet traffic, thereby to produce output packet traffic ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said output traffic versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

23. (Previously Presented) The computer program according to claim 22, further comprising code for a selecting step for selecting a type of the probability density function.

24. (Previously Presented) The computer program according to claim 23, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction determining the constraint parameter.

25. (Previously Presented) The computer program according to claim 23, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed prior to determining the constraint parameter.

26. (Previously Presented) The computer program according to claim 25, wherein the derived probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the code for the determining step comprises:

code for a selecting step for selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

code for a deleting step for deleting said smallest constraint parameter value from the look-up table.

27. (Previously Presented) The computer program according to claim 26, further comprising:

code for a refresh step for refreshing the look-up table to an original state after a time period.

28. (Previously Presented) The computer program according to claim 22, wherein the probability density function is an exponential function.

29. (Currently Amended) A method of policing input packet traffic, said method comprising steps of:

determining a constraint parameter dependent upon a probability density function; and

tagging, based upon said parameter, conforming packets in the input packet traffic, thereby to produce output packet traffic wherein tagged packets comprise a policed traffic stream ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said policed traffic stream versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

30. (Previously Presented) The method according to claim 29, wherein prior to the determining step, the method comprises a further step of:

selecting a type of the probability density function.

31. (Previously Presented) The method according to claim 30, wherein a probability distribution function which is derived from the probability density function of the selected type is evaluated in conjunction with the determining step, thereby permitting said determining of the constraint parameter.

32. (Previously Presented) The method according to claim 30, wherein a probability distribution function which is derived from the probability density function of the selected type is evaluated prior to the determining step, thereby permitting said determining of the constraint parameter.

33. (Previously Presented) The method according to claim 32, wherein the evaluated probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the determining step comprises sub-steps of:

selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

deleting said smallest constraint parameter value from the look-up table.

34. (Previously Presented) The method according to claim 33, wherein the look-up table is refreshed to an original state after a time period.

35. (Previously Presented) The method according to claim 29, wherein the probability density function is an exponential function.

36. (Currently Amended) A packet traffic policer comprising:

determination means configured to determine a constraint parameter dependent upon a probability density function; and

tagging means configured to tag, based upon the parameter, conforming packets in traffic input to said tagging means, thereby to produce output traffic wherein tagged packets comprise a policed traffic stream ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said policed traffic stream versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

37. (Previously Presented) The packet traffic policer according to claim 36, further comprising:

selection means for selecting a type of the probability density function.

38. (Previously Presented) The packet traffic policer according to claim 37, further comprising:

derivation means configured to derive a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction with said determining of the constraint parameter.

39. (Previously Presented) The packet traffic policer according to claim 37, further comprising:

derivation means configured to derive a probability distribution function from the probability density function of the selected type, said derivation being performed prior to said determining of the constraint parameter.

40. (Previously Presented) The packet traffic policer according to claim 39, wherein the evaluated probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the determining means comprise:

selecting means configured to select, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

deleting means configured to delete said smallest constraint parameter value from the look-up table.

41. (Previously Presented) The packet traffic policer according to claim 40, further comprising:

refresh means configured to refresh the look-up table to an original state after a time period.

42. (Previously Presented) The packet traffic policer according to claim 36, wherein the probability density function is an exponential function.

43. (Currently Amended) A computer readable memory medium for storing a program for an apparatus which polices input packet traffic, said program comprising:

code for a determining step for determining a constraint parameter dependent upon a probability density function; and

code for a tagging step for tagging, based upon said parameter, conforming packets in the input packet traffic, thereby to produce output packet traffic wherein tagged packets comprise a policed traffic stream ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said policed traffic stream versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

44. (Previously Presented) The computer readable memory medium according to claim 43, further comprising code for a selecting step for selecting a type of the probability density function.

45. (Previously Presented) The computer readable memory medium according to claim 44, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction with said determining of the constraint parameter.

46. (Previously Presented) The computer readable memory medium according to claim 44, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed prior to said determining of the constraint parameter.

47. (Previously Presented) The computer readable memory medium according to claim 46, wherein the evaluated probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the code for the determining step comprises:

code for a selecting step for selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

code for a deleting step for deleting said smallest constraint parameter value from the look-up table.

48. (Previously Presented) The computer readable memory medium according to claim 47, further comprising:

code for a refresh step for refreshing the look-up table to an original state after a time period.

49. (Previously Presented) The computer readable memory medium according to claim 43, wherein the probability density function is an exponential function.

50. (Currently Amended) A computer program for an apparatus which polices input packet traffic, said program comprising:

code for a determining step for determining a constraint parameter dependent upon a probability density function; and

code for a tagging step for tagging, based upon said parameter, conforming packets in the input packet traffic, thereby to produce output packet traffic wherein tagged packets comprise a policed traffic stream ~~having a pre-determined entropy bound~~ wherein the probability of buffer occupancy of a downstream buffer receiving said policed traffic stream versus buffer occupancy of said downstream buffer has an upper bound which approaches a straight line in the large buffer limit.

51. (Previously Presented) The computer program according to claim 50, further comprising code for a selecting step for selecting a type of the probability density function.

52. (Previously Presented) The computer program according to claim 51, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed in conjunction with said determining of the constraint parameter.

53. (Previously Presented) The computer program according to claim 51, further comprising:

code for a deriving step for deriving a probability distribution function from the probability density function of the selected type, said derivation being performed prior to said determining of the constraint parameter.

54. (Previously Presented) The computer program according to claim 53, wherein the evaluated probability distribution function is arranged as a look-up table of constraint parameter values, and wherein the code for the determining step comprises:

code for a selecting step for selecting, from the look-up table, a smallest one of said constraint parameter values which matches a characteristic of the input packet traffic; and

code for a deleting step for deleting said smallest constraint parameter value from the look-up table.

55. (Previously Presented) The computer program according to claim 54, further comprising:

code for a refresh step for refreshing the look-up table to an original state after a time period.

56. (Previously Presented) The computer program according to claim 50, wherein the probability density function is an exponential function.

57. (Original) A method of controlling admission of a proposed additional input packet traffic stream to a network node, said node having a prior input packet traffic stream, and an output packet traffic stream carried on a link having an associated maximum bandwidth, said method comprising steps of:

shaping the prior input packet traffic stream to have a corresponding pre-determined entropy bound if said prior stream does not have said corresponding pre-determined entropy bound;

shaping the proposed additional input packet traffic stream to have a corresponding pre-determined entropy bound if said proposed stream does not have said corresponding pre-determined entropy bound;

determining corresponding equivalent bandwidths for the prior traffic stream and the proposed additional traffic stream; and

admitting the proposed additional traffic stream if a sum of the corresponding equivalent bandwidths of the prior traffic stream and the proposed additional traffic stream does not exceed said maximum bandwidth.

58. (Original) A connection admission controller configured to control admission of a proposed additional input packet traffic stream to a network node, said node having a prior input packet traffic stream, and an output packet traffic stream carried on a link having an associated maximum bandwidth, said controller comprising:

first shaping means configured to shape the prior input packet traffic stream to have a corresponding pre-determined entropy bound if said prior stream does not have said corresponding pre-determined entropy bound;

second shaping means configured to shape the proposed additional input packet traffic stream to have a corresponding pre-determined entropy bound if said proposed stream does not have said corresponding pre-determined entropy bound;

determining means configured to determine corresponding equivalent bandwidths for the prior traffic stream and the proposed additional traffic stream; and

admission means configured to admit the proposed additional traffic stream if a sum of the corresponding equivalent bandwidths of the prior traffic stream and the proposed additional traffic stream does not exceed said maximum bandwidth.

59. (Original) A computer readable memory medium for storing a program for an apparatus which controls admission of a proposed additional input packet traffic stream to a network node, said node having a prior input packet traffic stream, and an output packet traffic stream carried on a link having an associated maximum bandwidth, said program comprising:

code for a first shaping step for shaping the prior input packet traffic stream to have a corresponding pre-determined entropy bound if said prior stream does not have said corresponding pre-determined entropy bound;

code for a second shaping step for shaping the proposed additional input packet traffic stream to have a corresponding pre-determined entropy bound if said proposed stream does not have said corresponding pre-determined entropy bound;

code for a determining step for determining corresponding equivalent bandwidths for the prior traffic stream and the proposed additional traffic stream; and

code for an admitting step for admitting the proposed additional traffic stream if a sum of the corresponding equivalent bandwidths of the prior traffic stream and the proposed additional traffic stream does not exceed said maximum bandwidth.

60. (Original) A computer program for an apparatus which controls admission of a proposed additional input packet traffic stream to a network node, said node having a prior input packet traffic stream, and an output packet traffic stream carried on a link having an associated maximum bandwidth, said program comprising:

code for a first shaping step for shaping the prior input packet traffic stream to have a corresponding pre-determined entropy bound if said prior stream does not have said corresponding pre-determined entropy bound;

code for a second shaping step for shaping the proposed additional input packet traffic stream to have a corresponding pre-determined entropy bound if said proposed stream does not have said corresponding pre-determined entropy bound;

code for a determining step for determining corresponding equivalent bandwidths for the prior traffic stream and the proposed additional traffic stream; and

code for an admitting step for admitting the proposed additional traffic stream if a sum of the corresponding equivalent bandwidths of the prior traffic stream and the proposed additional traffic stream does not exceed said maximum bandwidth.

61-64. (Canceled)

65. (Previously Presented) The method of shaping input packet traffic according to claim 1, wherein prior to the determining step, the method comprises the further steps of:

determining a target equivalent bandwidth required by said input traffic to meet a desired quality of service;

determining a differential bandwidth dependent upon (i) a present bandwidth allocated to the input traffic and (ii) the target equivalent bandwidth;

determining, based upon said differential bandwidth, a probability distribution function; and

determining, from the probability distribution function, said probability density function which is associated to the probability distribution function.

66. (Previously Presented) The packet traffic shaper according to claim 8, further comprising:

means for determining a target equivalent bandwidth required by said input traffic to meet a desired quality of service;

means for determining a differential bandwidth dependent upon (i) a present bandwidth allocated to the input traffic and (ii) the target equivalent bandwidth;

means for determining, based upon said differential bandwidth, a probability distribution function; and

means for determining, from the probability distribution function, said probability density function which is associated to the probability distribution function.

67. (Previously Presented) The computer readable memory medium for storing a program for a packet traffic shaper according to claim 15, further comprising:

code for determining a target equivalent bandwidth required by said input traffic to meet a desired quality of service;

code for determining a differential bandwidth dependent upon (i) a present bandwidth allocated to the input traffic and (ii) the target equivalent bandwidth;

code for determining, based upon said differential bandwidth, a probability distribution function; and

code for determining, from the probability distribution function, said probability density function which is associated to the probability distribution function.

68. (Previously Presented) The computer program for a packet traffic shaper according to claim 22, further comprising:

code for determining a target equivalent bandwidth required by said input traffic to meet a desired quality of service;

code for determining a differential bandwidth dependent upon (i) a present bandwidth allocated to the input traffic and (ii) the target equivalent bandwidth;

code for determining, based upon said differential bandwidth, a probability distribution function; and

code for determining, from the probability distribution function, said probability density function which is associated to the probability distribution function.

69. (Previously Presented) The method of shaping input traffic according to claim 65, wherein the constraining step further comprises constraining, based upon the constraint parameter, transmission of the input packet traffic thereby allocating to the input traffic the target equivalent bandwidth and achieving the desired quality of service.

70. (Previously Presented) The packet traffic shaper according to claim 66, wherein the constraining means is further adapted to constrain, based upon the constraint parameter, transmission of the input packet traffic thereby allocating to the input traffic the target equivalent bandwidth and achieving the desired quality of service.

71. (Previously Presented) The computer readable memory medium for storing a program for a packet traffic shaper according to claim 67, wherein the code for the constraining step is further adapted to constrain, based upon the constraint parameter, transmission of the input packet traffic thereby allocating to the input traffic the target equivalent bandwidth and achieving the desired quality of service.

72. (Previously Presented) The computer program for a packet traffic shaper according to claim 22, further comprising:

code for determining a target equivalent bandwidth required by said input traffic to meet a desired quality of service;

code for determining a differential bandwidth dependent upon (i) a present bandwidth allocated to the input traffic and (ii) the target equivalent bandwidth;

code for determining, based upon said differential bandwidth, a probability distribution function; and

code for determining, from the probability distribution function, said probability density function which is associated to the probability distribution function.